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09/533,421	03/22/2000	Charles S. Roberson	CISCP794	8630

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EXAMINER

LEE, TIMOTHY L

ART UNIT PAPER NUMBER

2662

DATE MAILED: 07/14/2004

14

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/533,421

Applicant(s)

ROBERSON, CHARLES S.

Examiner

Timothy Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-10 and 12-21 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,3-10 and 12-21 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3, 6, 10, 12, 15, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demiray et al. (US 5,740,157) in view of Thomas et al. (US 6,038,288).
3. Regarding claims 1, 6, 10, 15, 20, and 21, Demiray et al. discloses a cross-connect system that has multiple input and output interfaces (plurality of interface cards). See Fig. 1, and col. 5, lines 1-16. The system also includes cross connect units 24 and 26 (an active cross-connect unit, a redundant cross-connect unit). See col. 5, lines 18-31. As shown in Fig. 1, there are a many lines connecting the interfaces to the cross connect units (a plurality of data buses, the data buses acting as communications links between the plurality of cards). An automatic protection switching algorithm exists for the redundant pair of transmit modules. The algorithm monitors the status of the signal information on both the A and B modules and makes the decision as to whether the A or B module shall be selected to carry the active copy of the information traffic; modules can detect failures within themselves and communicate this status to the other module (monitoring the operational status for each one of the cards; determining the operational status of the cards; autonomously switching from non-operational card to a redundant

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card). See col. 3, lines 1-46. The same principle applies for faulty lines. For example, a high speed interface A may detect a problem in the OC-3 line 12 as indicated by an "X" and indicate to the high speed interface B over the communication link 20 that there is a problem. Any decision to switch over may be effected in an almost instantaneous manner. See col. 5, lines 14-49. Controllers on the working and protection high speed interfaces communicate for the switchover decisions (an active control unit, a redundant control unit). See col. 4, lines 11-14. Demiray et al. does not expressly disclose reporting maintenance is required for the non-operational card or link. Thomas et al. discloses a fault information display generated by a maintenance arbitrator. When a unit reports a fault condition to the peripheral module node, maintenance arbitration software consistent with the present invention generated a screen that provides critical information about the fault condition to the technician. The software also identifies the cards within the unit that required replacement. See col. 10, lines 15-34. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the maintenance reporting from Thomas et al. in the system of Demiray et al. when a unit has failed. One would have been motivated to do this because having the failed component up and running again would ensure that the current connection has a backup connection for when it breaks down. Having a backup in place as soon as possible minimizes the number of packets that will be lost in transmission.

4. Regarding claims 6 and 15 more specifically, if the entire system only consists of the A and B cards shown in Fig. 1, then the fault detection and reporting mentioned previously will account for any card or link in the system.

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5. Regarding claims 3 and 12, as mentioned previously, the system automatically switches away from non-working lines or modules in order to keep the system active.

6. Claims 4 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demiray et al. in view of Thomas et al., further in view Quoc et al. (US 6,092,214) and in light of the rejections to claims 1 and 10. Demiray et al. does not expressly disclose marking a card as non-operational when it is receiving a software update. Quoc et al. discloses that one of the purposes of having a redundant system is to provide seamless transitions between network management modules in the event of system upgrades. See col. 9, lines 57-65. It is implicit in this discussion that there is some sort of notice or “flag” that goes up when a part is being upgraded. It would have been obvious to a person of ordinary skill in the art at the time of the invention to have the redundant parts of Demiray et al. serve the same purposes as described in Quoc et al.. One would have been motivated to do this because the module will in effect become non-operational during this process, so the system will want to seamlessly reroute the messages using the redundant parts so that the system doesn’t have to shut down during an upgrade.

7. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demiray et al. in view of Thomas et al., further in view of Harris (US 5,771,274) and in light of the rejections to claims 1 and 10. Demiray et al. does not expressly disclose storing all of the past faults in a database. Harris discloses adding new alarms to a database that includes data of past alarms. See col. 4, lines 11-21. It would have been obvious to a person of ordinary skill in the art to keep a record of past problems as disclosed by Harris in the system disclosed by Demiray et al.. One would have been motivated to do this because keeping a record of past faults and changes can indicate the

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overall reliability of a particular system and can indicate when a replacement part or system may be needed.

8. Claims 7, 8, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demiray et al. in view of Thomas et al., further in view of Ise et al. (US 5,888,586) and in light of the rejections of claims 6 and 15. Demiray et al. does not expressly disclose reporting the change in operational status after a predetermined period of time. Ise et al. discloses issuing an alarm notice after a predetermined amount of time has expired. See claim 1. It would have been obvious to a person of ordinary skill in the art to wait an amount of time as taught by Ise et al. before issuing the operational change in status of the system disclosed by Demiray et al.. One would have been motivated to do this because sometimes the system could receive a bad input and misread a fault, so waiting a period of time before officially issuing the fault could allow the system to confirm that a fault has actually occurred.

9. Regarding claims 8 and 17, if the system never meets that time period, then it doesn't send out the change of operational status. Inherently then, the change of operational status is then discarded.

10. Claims 9, 18, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Demiray et al. in view of Thomas et al., further in view of Rubino et al. (US 6,424,629) and in light of the rejections to claims 1 and 10. Dermiray et al. does not expressly disclose having a connection map, where the map is updated to indicate changes in the system. Rubino et al. discloses having a connection map of the system, where when a logical connection becomes unusable due to a failure, an alternate connection can be sued. The router than updates its routing table to map the destination

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back to the preferred logical connection. See col. 2, lines 14-34. It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the teachings of Rubino et al. involving updating a connection map in the cross connect units disclosed by Demiray et al.. One would have been motivated to do this because reconfiguring the connections quickly will allow for less lost data that would have been lost had the system not reconfigured according to the updated information in the connection table.

Response to Arguments

11. Applicant's arguments filed April 2, 2004 have been fully considered but they are not persuasive.

12. In response to Applicant's argument that neither Demiray et al. nor Thomas et al. in combination teach or suggest determining when a non-operation active communication link requires maintenance, the Examiner respectfully disagrees. Specifically, Applicant argues that Thomas et al. only makes mention of reporting of maintenance regarding cards and not links. While not agreeing or disagreeing with this contention, the Examiner believes that Applicant has misinterpreted the Examiner's argument. In using Thomas et al., the Examiner is relying on the teaching from Thomas et al. regarding the reporting of faults for maintenance generally, not just the reporting of faults found specifically in cards. As stated in the rejection, it is the maintenance reporting feature from Thomas et al. that is used in the combination between Thomas et al. and Demiray et al.. Demiray, as mentioned previously, discloses that the system is already able to identify the faults and re-route messages based on those faults. Demiray et al. lacks the feature of reporting

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these faults, whether or not they occur in the links or the cards. The Examiner only relies Thomas et al.'s teachings regarding maintenance reporting generally and uses this feature in combination with Demiray et al.. Because it is the combination of the references that matters, the Examiner believes the rejection remains proper.

13. In response to Applicant's argument that neither Demiray et al. nor Thomas et al. appears to teach detecting and reporting a change in operational status of any card or communications link, the Examiner respectfully disagrees. As stated previously, it is the combination of the references that matters. A change in operation status is when a link or a card becomes faulty. Demiray et al. discloses detecting these conditions and rerouting based on the detected condition. Thomas et al. discloses reporting faults for maintenance purposes. Thus, the combination of Demiray et al. and Thomas et al. discloses detecting and reporting faults anytime they occur, so the rejection remains proper.

14. In response to Applicant's argument that Rubino et al. does not suggest updating a connection map when it is determined that the operation status of a card or communications link is non-operational, the Examiner respectfully disagrees. Again, it is the combination of references that matters. If the system of Demiray et al. was to include the routing table taught by Rubino et al., it would be obvious to update the table with connections that are working as opposed to updating it with connections that are no longer operational because of faults. One would have been motivated to do this because maintaining a routing table that is updated would allow for the quickest re-routing—this way, data does not have to be routed through routes that are known to be faulty. Because the combination of Demiray et al., Thomas et al, and Rubino et al. discloses updating a routing table, the Examiner believes the rejection remains proper.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy Lee whose telephone number is (703)305-7349. The examiner can normally be reached on M-F, 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (703)305-4744. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLL
Timothy Lee
July 7, 2004



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